

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-22 (canceled).

Claim 23 (new). A complex of (i) an organoboron compound of the general formula (I):



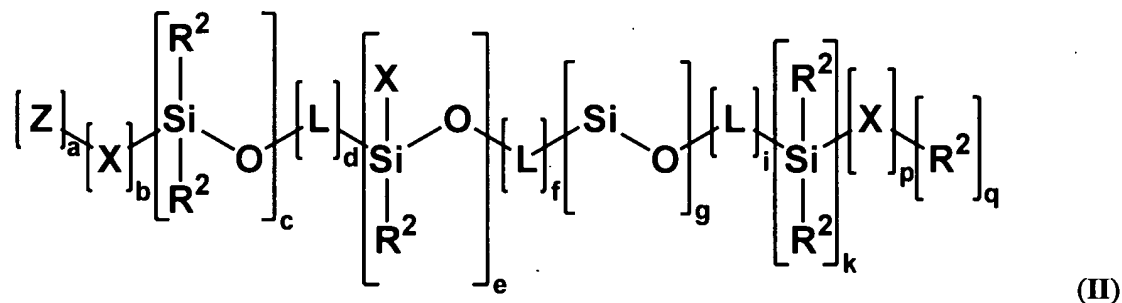
in which each R^1 independently represents an alkyl group, an aryl group, an alkylaryl group, an arylalkyl group, a cycloalkyl group, an alkylcycloalkyl group or a cycloalkylalkyl group each of which may be unsubstituted or substituted by one or more of the same or different substituents selected from halogen atoms and alkoxy groups

and (ii) an organosilicon compound containing at least one primary, secondary and/or tertiary amino group.

Claim 24 (new). The complex as claimed in claim 23, in which each R^1 independently represents a C_{1-10} alkyl group.

Claim 25 (new). The complex as claimed in claim 24, wherein each R^1 is independently selected from the group consisting of an ethyl group, isopropyl group, *t*-butyl group and *n*-butyl group.

Claim 26 (new). The complex as claimed in claim 23, in which the organosilicon compound has the general formula (II):



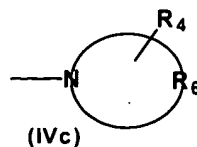
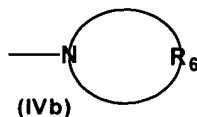
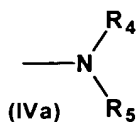
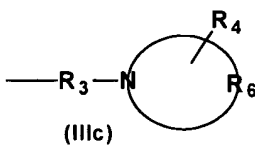
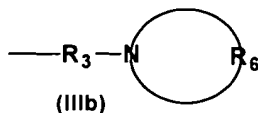
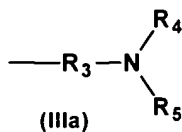
in which:

a and q, are independently equal to 0 or 1;

b, c, d, e, f, g, i, k, and p are independently equal to or greater than 0 and wherein a, c, e, g, and k cannot be all equal to 0 at the same time and at least one of b, d, f, i and p is equal to or greater than 1;

each R^2 independently represents a hydrogen atom, a hydroxyl group, an alkyl group, a fluoroalkyl group, a glycidyl alkyl group, an acrylalkyl group, a (meth)acrylalkyl group, an alkoxy group, an alkoxyalkyl group, an alkenyl group, a cycloalkyl group, an aryl group, an alkyloxyaryl group, an aryloxyalkyl group or an alkyloxycycloalkyl group, each of which may be optionally substituted by one or more primary, secondary or tertiary amino groups, hydroxyl groups or carbonyl groups;

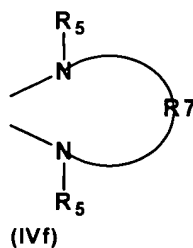
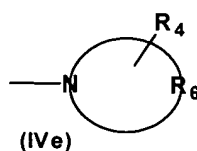
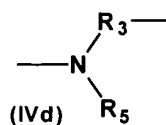
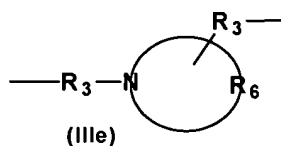
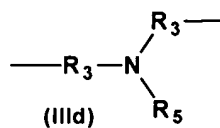
each X, when b, p or e is equal to 1, independently represents a group of the general formulae:



in which:

R^3 represents an alkylene group, an alkenyl group, a phenylene group or a cycloalkylene group; each of R^4 and R^5 independently represents a hydrogen atom, a hydroxyl group, an alkyl group, an aryl group, a silylalkyl group, a silylaryl group, a cycloalkyl group, an arylalkyl group, an alkylaryl group, a cycloalkylalkyl group, an alkylcycloalkyl group, a saturated or unsaturated eterocyclic group, a phenyl (Ph-) group, a phenoxy (Ph-O-) group, a Ph-(C=O)- group, a fluoroalkyl group, a glycidyl alkyl group, an acrylalkyl group, a (meth)acrylalkyl group, an alkoxy group, an alkoxyalkyl group, an alkenyl group, an alkyloxyaryl group, an aryloxyalkyl group or an alkyloxycycloalkyl group each of which may be optionally substituted by one or more primary, secondary or tertiary amino groups, hydroxyl groups, or carbonyl groups; R^6 represents an alicyclic group, aromatic group or saturated or unsaturated eterocyclic group each of which can be mono-, di-, tri-, tetra-, or penta-substituted by R^3 or R^4 groups;

and each X, when b, e or p is greater than 1, independently represents a group of the formulae:



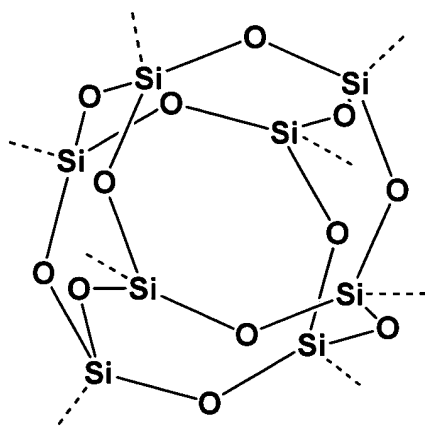
in which:

R^3 , R^4 , R^5 and R^6 are as defined above;

R^7 represents a cyclic of the structure $-\text{Si}(\text{R}^2)-[\text{Si}(\text{R}^2)_2-\text{NH-}]_n-\text{Si}(\text{R}^2)-$ where n is equal to or greater than 1 and R^2 is defined as above;

L represents a monovalent or divalent group independently selected from any of the groups representing X, R², R³, R⁵, R⁴, R⁶, R⁷ or a polymeric/oligomeric organic mono- or di-radical; and

Z represents:



wherein every silicon atom forms a bond with either X or R² or R⁴ or R⁵ and wherein at least one of the silicon atoms is bonded with one X.

Claim 27 (new). The complex as claimed in claim 26, in which b=1, c=1 and q=1 and a, d, e, f, g, i, k, p and q are equal to 0.

Claim 28 (new). The complex as claimed in claim 26, in which b=1, c is greater than 1, e is greater than 1, k=1 and p=1 and a, d, f, g, i and q are equal to 0.

Claim 29 (new). The complex as claimed in claim 26, in which a=1 and b=1 and c, d, e, f, g, i, k, p and q are equal to 0.

Claim 30 (new). The complex as claimed in claim 26, in which the organosilicon compound is 3-(2-aminoethylamino)propyltrimethoxy silane; 3-(2-aminoethylamino)propyltriethoxy silane; (aminopropyl)trimethoxy silane; (aminopropyl)triethoxy silane; (aminomethyl)trimethoxy silane; (aminomethyl)triethoxy silane; (N-cyclohexylaminomethyl)trimethoxy silane; (N-cyclohexylaminomethyl)triethoxy silane; (N-phenylaminomethyl)trimethoxysilane; (N-

phenylaminomethyl)methyldimethoxysilane; (N,N-dimethylaminopropyl)trimethoxysilane; Bis[(3-trimethoxysilyl)propyl]ethylenediamine; N-(3-triethoxysilylpropyl)4,5-dihydroimidazole; 2-(trimethoxysilylethyl)pyridine; Bis(p-aminophenoxy)dimethylsilane; Bis(p-aminophenoxy)dimethylsilane; Bis(dimethylamino)diethylsilane; Ureidopropyltrimethoxysilane; Bis(N-methylbenzamido)ethoxymethylsilane; Octamethylcyclotetrasilazane; 1,3-Bis(3-aminopropyl)tetramethyldisiloxane; an amino functionalised silicone fluid; an amino functionalized silica gel; an amino functionalized-POSS; an amino/imino functionalized POSS, or mixtures thereof.

Claim 31 (new). The complex as claimed in claim 26, in which the organosilicon compound is hydroxyethoxysilatrane.

Claim 32 (new). A method of initiating the polymerization of a polymerizable monomer or oligomer by contacting the monomer or oligomer with a complex of (i) an organoboron compound of the general formula (I):



in which each R^1 independently represents an alkyl group, an aryl group, an alkylaryl group, an arylalkyl group, a cycloalkyl group, an alkylcycloalkyl group or a cycloalkylalkyl group each of which may be unsubstituted or substituted by one or more of the same or different substituents selected from halogen atoms and alkoxy groups

and (ii) an organosilicon compound containing at least one primary, secondary and/or tertiary amino group and optionally supplying energy in the form heat, actinic radiation, electromagnetic radiation, magnetic radiation, electrical current, ultrasound, ultraviolet radiation or combinations thereof sufficient to release the boron compound from the complex.

Claim 33 (new). A method of adhesively bonding two substrates together comprising the steps of applying a polymerizable composition comprising a polymerizable monomer or oligomer and a complex of (i) an organoboron compound of the general formula (I):



in which each R^1 independently represents an alkyl group, an aryl group, an alkylaryl group, an arylalkyl group, a cycloalkyl group, an alkylcycloalkyl group or a cycloalkylalkyl group each of which may be unsubstituted or substituted by one or more of the same or different substituents selected from halogen atoms and alkoxy groups

and (ii) an organosilicon compound containing at least one primary, secondary and/or tertiary amino group to a first substrate; positioning a second substrate in contact with the first substrate; and curing the polymerizable composition.

Claim 34 (new). The method of claim 33, wherein at least one of the substrates is a low surface energy substrate.

Claim 35 (new). The method of claim 34, wherein the low surface energy substrate comprises a material selected from polyethylene, polypropylene, copolymers of α -olefins, and fluorinated polymers.

Claim 36 (new). The method of claim 33, wherein the surface of at least one of the substrates comprises a material selected from the group of thermoplastics, thermosets, wood, composites, ceramics, glass, concrete, and metals.

Claim 37 (new). A polymerisable composition comprising at least one radically polymerisable monomer and/or oligomer and a complex of (i) an organoboron compound of the general formula (I):



in which each R^1 independently represents an alkyl group, an aryl group, an alkylaryl group, an arylalkyl group, a cycloalkyl group, an alkylcycloalkyl group or a cycloalkylalkyl group each of which may be unsubstituted or substituted by one or more of the same or different substituents selected from halogen atoms and alkoxy groups

and (ii) an organosilicon compound containing at least one primary, secondary and/or tertiary amino group.

Claim 38 (new). The polymerisable composition of claim 37, which further comprises at least one of a reactive or non-reactive diluent, a decomplexing agent and an open time extender.

Claim 39 (new). The polymerisable composition of claim 37, which further comprises one or more fillers.

Claim 40 (new). The polymerisable composition of claim 37 which further comprises trimethylolpropane tris(2-methyl-1-aziridinepropionate).

Claim 41 (new). The polymerisable composition of claim 37 which further comprises at least one heat management material.

Claim 42 (new). The polymerisable composition of claim 37, in which the concentration of the complex is sufficient to provide 0.001% to 10.0% by weight of boron, based on the total weight of the polymerisable composition.

Claim 43 (new). A 2 part composition comprising:

(1) a silicon-amino organo-borane complex comprising an organoboron compound of the general formula (I):



in which each R¹ independently represents an alkyl group, an aryl group, an alkylaryl group, an arylalkyl group, a cycloalkyl group, an alkylcycloalkyl group or a cycloalkylalkyl group each of which may be unsubstituted or substituted by one or more of the same or different substituents selected from halogen atoms and alkoxy groups

and an organosilicon compound containing at least one primary, secondary and/or tertiary amino group; and

(2) a blend of radically polymerisable compounds, at least one decomplexing agent; and optionally at least one open time extender and/or toughener material.